

PATENT SPECIFICATION

DRAWINGS ATTACHED

984.782



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Date of filing Complete Specification: Feb. 13, 1964.

Application Date: March 4, 1963.

No. 8618/63.

Complete Specification Published: March 3, 1965.

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Index at acceptance:—A6 S(19A.1A, 19D4, 19D6)

Int. Cl.:—A 63 h

COMPLETE SPECIFICATION

Flashing Light on Toy Model

We, MECCANO LIMITED, a British Company of 236 Binns Road, Liverpool, 13, Lancashire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to model vehicles and is more particularly concerned with model vehicles provided with lighting arrangements.

It has previously been proposed to provide model vehicles with a flashing light to indicate that the vehicle, for instance a police car or a fire engine is to receive priority on the road.

It is the object of the present invention to provide a model vehicle having flashing direction-indicating lights.

According to the invention, a model vehicle has a direction-indicating light bulb on each side of the vehicle body, a battery, means responsive to a steering movement applied to the vehicle for selectively connecting one or other of said bulbs to said battery in accordance with the direction of said steering movement and means for intermittently interrupting the connection between the selected bulb and the battery to cause the lighting of the bulb to be intermittently interrupted.

In one embodiment of the invention, the interrupting means comprise a circuit interrupter controlled by the movement of the vehicle while in another embodiment the interrupting means comprise a bimetallic switching element included within the envelope of each bulb.

The invention will be better understood from the following description taken in conjunction with the accompanying drawings of the embodiment of the invention given by way of example. In the drawings, comprising Figs. 1 to 6,

Fig. 1 shows an underside view in perspective of part of the body of a model vehicle, Fig. 2 shows a topside view in perspective

of the chassis of the vehicle,

Fig. 3 shows a plan view of the front portion of the chassis,

Fig. 4 shows a sectional view along the line IV—IV of Fig. 3,

Fig. 5 shows a part-sectional view along the line V—V of Fig. 3 and

Fig. 6 shows a front view in perspective of the front pair of wheels of the chassis.

Referring to Fig. 1 of the drawings, the body portion 10 of this particular embodiment is moulded from a plastics material and is secured to the die-cast metal chassis 11, shown in Fig. 2, by the reduced ends of the pillars 12 on the chassis entering the holes 13 on the body member, the reduced ends of the pillars being rivetted over to secure the two parts together. The underside of the body member 10 carries a clip 14 for receiving a 1½ volt battery, the ends of which make contact with the conducting strips 15 and 16 which are rivetted to the underside of the body member. The conducting strip 15 has a portion 17 which is at right angles thereto so that it depends vertically from the underside of the body member 10. The conducting strip 16 also has a portion 18 which is bent downwardly and when the body portion is secured to the chassis, a cam 19 (Fig. 2) secured to the spindle 20 carrying the rear wheels 21 engages with the downwardly extending portion 18 once for each revolution of the spindle 20. Also rivetted to the underside of the body member 10 are two lamp holders 22 and 23 into which are inserted the light bulbs 24 and 25, the positioning of the lamp holders being such that, when the bulbs are screwed home, the conducting ends of the bulbs are both in contact with the vertically depending portion 17 of the conducting strip 15. Each of the lamp holders 22 and 23 also has a depending portion 26 and 27 respectively and, when the body portion is secured to the chassis and a steering movement is applied to the vehicle, either depending portion 26 or

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depending portion 27 is adapted to engage with the forked end 28 or 29 respectively of the spring 30.

5 Referring in particular to Figs. 2 to 6, the spindles 31 and 32 carrying the two pairs of front wheels 33, 34 and 35, 36, normally rest in a transverse depression 37 (Fig. 4) formed in the base plate and the centre portion of the two spindles is secured against longitudinal movement by the pairs of vertical pillars 38 and 39. The spindles are restrained from pivoting about their centre points by the engagement therewith of the forked springs 30 and 40 the two arms of which, as shown in Fig. 4 are bent upwardly to enable engagement with the depending portion 26 and 27 of the lamp holders 22 and 23. The spindles 31 and 32 pass through slots such as 41, 42 provided in upstanding portions 43 and 44 of the chassis. These slots have forwardly and rearwardly extending portions and the rearwardly extending portion is sloped upwardly as shown in Figs. 2 and 4.

15 A steering movement is applied to the vehicle by exerting a downward pressure on the side of the vehicle corresponding to the turning direction and the effect of this is to cause the spindles 31 and 32 to turn about their centre points. The end of the spindle on the turning side of the vehicle rises relative to the chassis of the vehicle due to the fact that the spindles pass into the upwardly extending portion of the slots such as 41 and 42. This action, when a right-hand turn is made, causes, as shown in Fig. 6, spring 28 to rise relative to the chassis, assuming that the spindles move rearwardly into the slots 41 and 42 shown in Fig. 2 and the position of the spring 28 with respect to the depending portion 27 of the lamp holder 17 is such that spring 28 makes contact with the depending portion 27 but no contact is made between spring 29 the depending portion 26 because consequently a circuit is now completed for the lamp 25 from battery through the conducting strip 15 and the vertically depending portion 17 thereof, lamp 25, lamp holder 23, the conducting strip 27, spring 28, the chassis 11, the rear spindle 20, cam 19, downwardly extending portion 18 of the conducting strip 16 back to the battery. It will be understood that when the vehicle is moving and a steering action is applied to the vehicle, cam 19 will cause the electrical circuit to be periodically interrupted so that the lamp 25 intermittently flashes.

55 It will also be understood that if pressure had been exerted on the other side of the vehicle, engagement would take place between the tip 29 of the forked spring 30 and the depending portion 26 of the lamp holder 22 whereby lamp 24 would be intermittently

65 flashed. In fact, the electrical circuit includes individual parallel connected branches for the two lamps and a common portion which includes the cam 19.

70 The flashing of the lamps may also be effected by providing lamps which have within the envelope a bimetallic switching device which responds to the heat radiated by the filament in order to disconnect the battery supply. The use of such lamps has the advantage that lamps continue to flash if the vehicle is stationary provided that the downward pressure on one side of the vehicle is maintained.

75 The above embodiment of the invention is given by way of example only and many modifications may be made all of which will fall within the scope of the invention. For instance, the shape of the conducting strip 15 and 16 may be altered to suit the shape of the underside of the body member 10. Further the invention does not necessitate a body member formed of a plastics material but it can be applied to a body member of die-cast metal but in this case insulating problems will arise.

WHAT WE CLAIM IS:—

1. A model vehicle having a direction-indicating light bulb on each side of the vehicle body, a battery, means responsive to a steering movement applied to the vehicle for selectively connecting one or other of said bulbs to said battery in accordance with the direction of the steering movement and means for intermittently interrupting the connection between the selected bulb and the battery to cause the lighting of the bulb to be intermittently interrupted.

2. A model vehicle as claimed in claim 1 wherein said last-mentioned means comprise a circuit interrupter controlled by the movement of the vehicle.

3. A model vehicle as claimed in claim 2, wherein the circuit interrupter is mounted on a spindle which carries one pair of vehicle wheels.

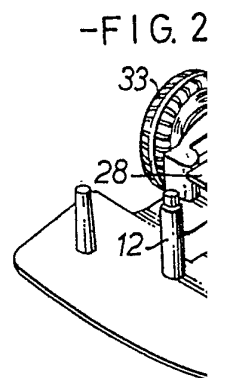
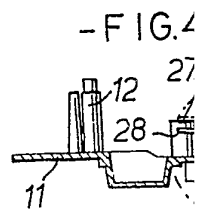
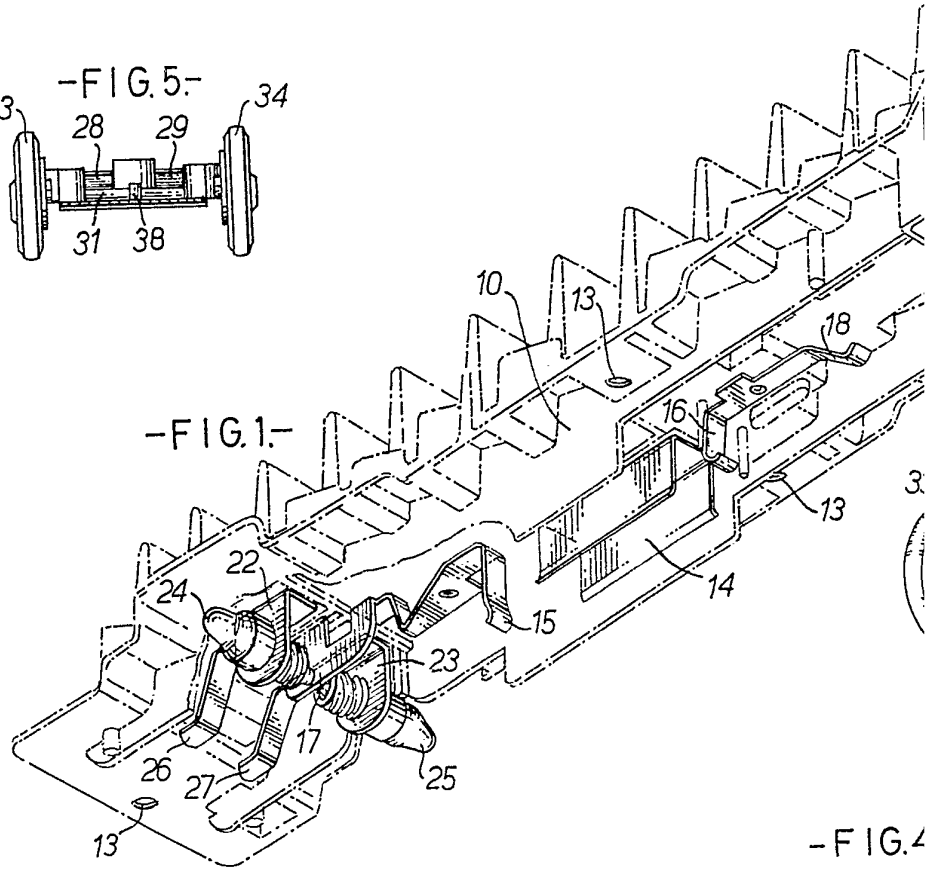
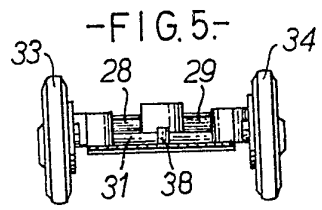
4. A model vehicle as claimed in claim 1, wherein said last-mentioned means comprise a bimetallic switching element enclosed within the envelope of each bulb.

5. A model vehicle as claimed in claim 3, wherein pressure on one side of the vehicle causes the spindle carrying the front wheels to make an upward and rearward movement relative to the body of the vehicle against the tension of a spring, said movement taking place only at the side where the downward pressure is exerted so that a turning movement of the vehicle takes place and the consequent upward movement of the spring closes a pair of contacts to connect the battery to the bulb located on that side of the vehicle where the downward pressure is exerted.

6. A model vehicle substantially as described with reference to the accompanying drawings.

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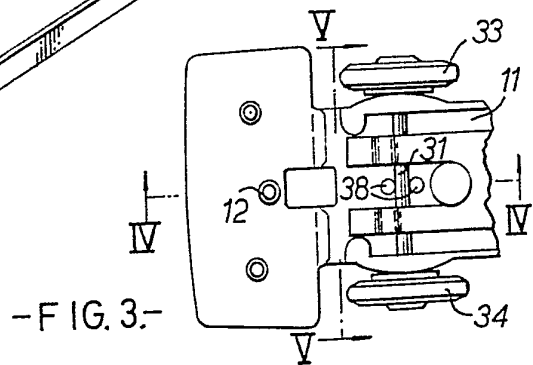
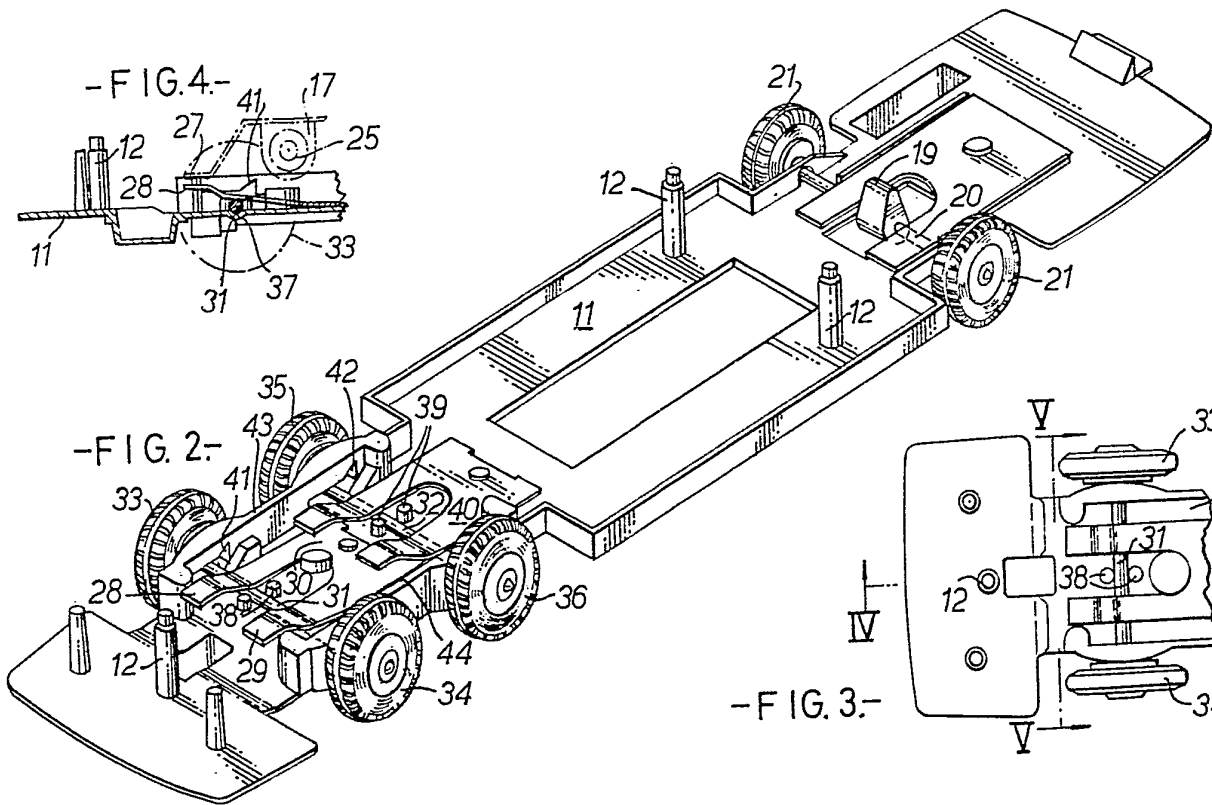
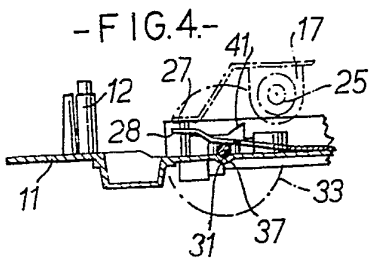
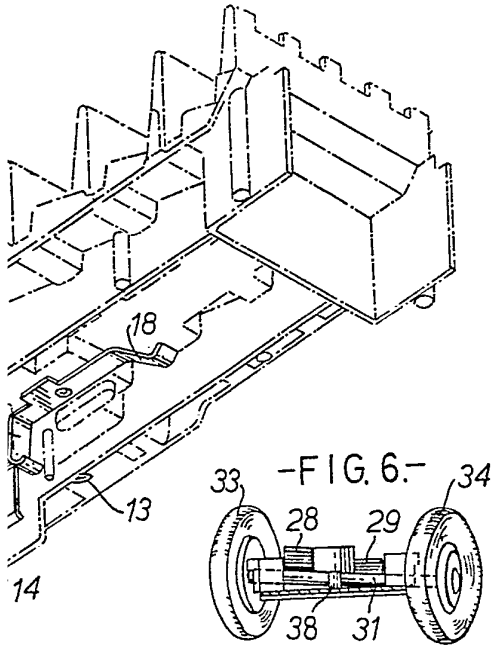
Leamington Spa: Printed for Her Majesty's Stationery Office, by the Courier Press (Leamington) Ltd.—1965. Published by The Patent Office, 25 Southampton Buildings, London, W.C.2, from which copies may be obtained.



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